2016

Nebraska Summary: S1127 Challenger MT495E

Nebraska Tractor Test Laboratory
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SUMMARY OF OECD TEST 3035–NEBRASKA SUMMARY 1127
CHALLENGER MT495E TECHSTAR DIESEL
CONTINUOUSLY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	D.E.F. Consumption Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1103 rpm)						
138.4 *(103.2)*	2099	8.48 *(32.10)*	0.427 *(0.260)*	16.32 *(3.21)*	0.57 *(2.17)*	
Standard Power Take-off Speed (1001 rpm)						
153.5 *(114.5)*	1904	8.93 *(33.80)*	0.408 *(0.248)*	17.19 *(3.39)*	0.61 *(2.30)*	
Maximum Power (1 hour)						
153.5 *(114.5)*	1904	8.93 *(33.80)*	0.408 *(0.248)*	17.19 *(3.39)*	0.61 *(2.30)*	
VARYING POWER AND FUEL CONSUMPTION						
138.4 *(103.2)*	2099	8.48 *(32.10)*	0.427 *(0.260)*	16.32 *(3.21)*	0.57 *(2.17)*	Air temperature
118.4 *(88.3)*	2112	7.35 *(27.81)*	0.432 *(0.263)*	16.12 *(3.17)*	0.40 *(1.52)*	70°F *(21°C)*
89.2 *(66.5)*	2126	5.96 *(22.54)*	0.465 *(0.283)*	14.97 *(2.95)*	0.31 *(1.17)*	Relative humidity
59.7 *(44.5)*	2132	4.44 *(16.79)*	0.518 *(0.315)*	13.45 *(2.65)*	0.22 *(0.85)*	54%
30.0 *(22.4)*	2141	3.00 *(11.36)*	0.699 *(0.425)*	10.00 *(1.97)*	0.11 *(0.43)*	Barometer
--- ---	2148	1.83 *(6.92)*	--- ---	--- ---	0.06 *(0.21)*	30.3" Hg *(102.5 kPa)*

Maximum torque - 485 lb.-ft. *(658 Nm)* at 1299 rpm
Maximum torque rise - 40.1%
Torque rise at 1700 engine rpm - 31%
Power increase at 1904 engine rpm - 11%

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Power at Rated Engine Speed—Turtle 8									
113.0 *(84.3)*	8365 *(37.2)*	5.07 *(8.16)*	2096	3.5	0.530 *(0.323)*	13.19 *(2.60)*	187 *(86)*	64 *(18)*	29.9 *(101.2)*
75% of Pull at Rated Engine Speed—Turtle 8									
85.3 *(63.6)*	6270 *(27.9)*	5.10 *(8.20)*	2119	2.6	0.580 *(0.353)*	12.07 *(2.38)*	187 *(86)*	63 *(17)*	29.9 *(101.2)*
50% of Pull at Rated Engine Speed—Turtle 8									
57.5 *(42.9)*	4180 *(18.6)*	5.16 *(8.30)*	2130	1.4	0.660 *(0.402)*	10.59 *(2.09)*	187 *(86)*	63 *(17)*	29.9 *(101.2)*
75% of Pull at Reduced Engine Speed—Turtle 12									
85.4 *(63.7)*	6295 *(28.0)*	5.09 *(8.19)*	1414	2.6	0.490 *(0.298)*	14.26 *(2.81)*	185 *(85)*	63 *(17)*	29.9 *(101.2)*
50% of Pull at Reduced Engine Speed—Turtle 12									
57.9 *(43.2)*	4205 *(18.7)*	5.16 *(8.31)*	1405	1.4	0.534 *(0.325)*	13.10 *(2.58)*	183 *(84)*	63 *(17)*	29.9 *(101.2)*

Location of tests: IRSTEA, Centre d'Antony, 1 rue Pierre-Gilles de Gennes CS 10030, Antony, France 92761

Dates of tests: October to November, 2016

Manufacturer: AGCO S.A.S 41, Avenue Blaise Pascal, 60000 Beauvais, France

CONSUMABLE Fluids and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F** *(15°/15°C)* 0.838 **Fuel weight** 6.98 lbs/gal *(0.836 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.08 lbs/gal *(1.091 kg/l)* **Oil SAE** 15W40 **API service classification** CJ-4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 15W/40 **Front axle lubricant** SAE 85W140 API GL-5

ENGINE: Make AGCO Power Diesel **Type** four cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** A49576 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.252" x 5.276" *(108.0 mm x 134.0 mm)* **Compression ratio** 17.8 to 1 **Displacement** 299 cu in *(4910 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) within a vertical muffler **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** F 097 901 **Tread width** rear 66.3" *(1685 mm)* to 96.7" *(2455 mm)* front 60.2" *(1530 mm)* to 89.8" *(2280 mm)* **Wheelbase** 105.1" *(2670 mm)* **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph *(km/h)*** forward: Low range 0-17 *(0-28)*, high range 0-25 *(0-40)* reverse: Low range 0-10 *(0-16)*, high range 0-23 *(0-38)* **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1868 engine rpm or 1000 rpm at 1903 engine rpm **Unladen tractor mass** 16810 lb *(7625 kg)*

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Turtle 3.5				
90.3 *(67.3)*	15265 *(67.9)*	2.22 *(3.57)*	2110	15.0	0.581 *(0.353)*	12.04 *(2.37)*	187 *(86)*	63 *(17)*	29.9 *(101.3)*
					Turtle 4.5				
111.7 *(83.3)*	14885 *(66.2)*	2.81 *(4.53)*	2106	11.2	0.534 *(0.325)*	13.10 *(2.58)*	189 *(87)*	63 *(17)*	29.9 *(101.2)*
					Turtle 6.5				
125.0 *(93.2)*	12005 *(53.4)*	3.90 *(6.28)*	1985	6.7	0.506 *(0.308)*	13.81 *(2.72)*	190 *(88)*	63 *(17)*	29.9 *(101.3)*
					Turtle 8				
128.1 *(95.5)*	10050 *(44.7)*	4.78 *(7.69)*	1964	4.9	0.497 *(0.302)*	14.06 *(2.77)*	189 *(87)*	64 *(18)*	29.9 *(101.2)*
					Turtle 10				
127.3 *(94.9)*	7600 *(33.8)*	6.28 *(10.11)*	1965	3.3	0.496 *(0.301)*	14.11 *(2.78)*	187 *(86)*	63 *(17)*	29.9 *(101.2)*
					Turtle 12				
126.5 *(94.3)*	6700 *(29.8)*	7.08 *(11.39)*	1953	2.7	0.501 *(0.305)*	13.96 *(2.75)*	187 *(86)*	63 *(17)*	29.9 *(101.2)*
					Turtle 14				
121.8 *(90.8)*	5575 *(24.8)*	8.19 *(13.18)*	1963	2.2	0.522 *(0.317)*	13.40 *(2.64)*	187 *(86)*	63 *(17)*	29.9 *(101.2)*
					Rabbit 9				
123.9 *(92.4)*	9260 *(41.2)*	5.02 *(8.07)*	1950	3.6	0.512 *(0.312)*	13.65 *(2.69)*	187 *(86)*	59 *(15)*	29.9 *(101.3)*
					Rabbit 12				
124.8 *(93.1)*	6250 *(27.8)*	7.49 *(12.06)*	1945	2.5	0.505 *(0.307)*	13.86 *(2.73)*	185 *(85)*	61 *(16)*	29.9 *(101.3)*
					Rabbit 15				
123.1 *(91.8)*	5125 *(22.8)*	9.01 *(14.50)*	1976	2.0	0.516 *(0.314)*	13.55 *(2.67)*	187 *(86)*	63 *(17)*	29.9 *(101.3)*
					Rabbit 17				
119.5 *(89.1)*	4405 *(19.6)*	10.17 *(16.37)*	1942	1.5	0.540 *(0.329)*	12.94 *(2.55)*	187 *(86)*	63 *(17)*	29.9 *(101.3)*

NOTE: This tractor has an engine control feature that allows the engine to run in a "boosted" mode, increased power level, when the tractor is operated during stationary PTO operations and when the travelling speed exceeds 9 mph *(15 kph)*.

NOTE: The data on this summary was obtained from OECD report 3035 conducted on the Massey Ferguson 6716S DYNA-VT Diesel.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **3035,** Nebraska Summary 1127, February 6, 2018.

Roger M. Hoy
Director

M.F. Kocher
J.D. Luck
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Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive Engaged dB(A)	Front wheel drive Disengaged dB(A)
At no load in Turtle 8	70.0	70.0
Bystander		--

Horizontal distances of drawbar hitch point behind rear wheel axis - 33.6 in *(854 mm)*, 34.8 in *(885 mm)*, 36.8 in *(935 mm)*, 40.7 in *(1035 mm)*, 42.7 in*(1085 mm)*, 46.6 in *(1185 mm)*

TIRES, BALLAST AND WEIGHT

	Tested without ballast
Rear Tires - No., size, ply & psi*(kPa)*	Two 580/70R38;**;14*(100)*
Front Tires - No., size, ply & psi*(kPa)*	Two 480/70R28;**;14*(100)*
Height of Drawbar	20.7 in *(520 mm)*
Static Weight with operator - Rear	10010 lb *(4540 kg)*
- Front	6965 lb *(3160 kg)*
- Total	16975 lb *(7700 kg)*

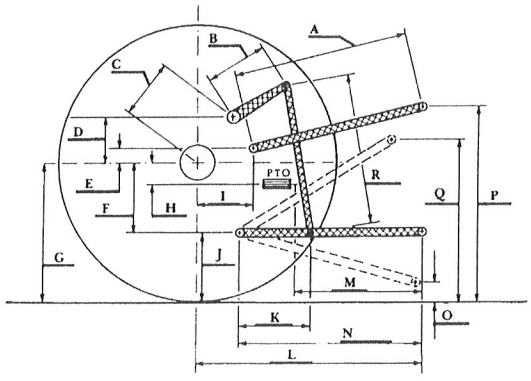
The data presented here is from a test series conducted on the Massey Ferguson 7715 Dyna VT, OECD Approval Number 2/2988 and Nebraska Summary Number 1060.

HYDRAULIC PERFORMANCE

CATEGORY: 3, NAO lower links		
Quick Attach: None		
OECD Static test		
Maximum force exerted through whole range:	16750 lbs *(74.5 kN)*	
i) Sustained pressure of the open relief valve:	2915 psi *(201 bar)*	
	Standard Pump	Optional pump
	29 GPM *(110 l/min)*	50 GPM *(190 l/min)*
	two outlet sets combined	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	29.6 GPM *(112.1 l/min)*	51.9 GPM *(196.5 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	27.0 GPM *(102.3 l/min)*	48.2 GPM *(182.5 l/min)*
Delivery pressure:	2725 psi *(188 bar)*	2395 psi *(165 bar)*
Power:	42.9 HP *(32.0 kW)*	67.3 HP *(50.2 kW)*
	single outlet set	single outlet set
ii) Pump delivery rate at minimum pressure:	30.2 GPM *(114.2 l/min)*	32.9 GPM *(124.6 l/min)*
iii) Pump delivery rate at maximum		
hydraulic power:	27.5 GPM *(104.0 l/min)*	27.5 GPM *(104.0 l/min)*
Delivery pressure:	2470 psi *(170 bar)*	2410 psi *(166 bar)*
Power:	39.6 HP *(29.5 kW)*	38.6 HP *(28.8 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	30.4	*773*
B	14.8	*375*
C	16.5	*419*
D	14.0	*355*
E	10.8	*275*
F	10.9	*276*
G	34.5	*875*
H	2.4	*60*
I	17.8	*452*
J	23.6	*599*
K	27.0	*687*
L	47.8	*1213*
M	24.4	*621*
N	40.3	*1024*
O	9.3	*235*
P	50.6	*1284*
Q	38.0	*964*
R	30.7	*780*



RECOMMENDED CITATION FORMAT:
NTTL.(2018) OECD tractor test 3035 for Challenger MT495E Techstar Diesel.
Lincoln, NE:Nebraska Tractor Test Laboratory. Retrieved from http://tractortestlab.unl.edu